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<110> MIYATA, Toshio
KUROKAWA, Kiyoshi

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Trp Met Gly Glu Lys Thr Gly Lys Ile Leu Thr Glu Phe Leu Gln Phe
5 10 15

tat gaa gac cag tat ggc gtg gct ctc ttc aac agc atg cgc cat gag 154
Tyr Glu Asp Gln Tyr Gly Val Ala Leu Phe Asn Ser Met Arg His Glu
20 25 30

att gag ggc acg ggg ctg ccg cag gcc cag ctg ctc tgg cgc aag gtg 202
Ile Glu Gly Thr Gly Leu Pro Gln Ala Gln Leu Leu Trp Arg Lys Val
35 40 45 50

cca ctg gac gag cgc atc gtc ttc tcg ggg aac ctc ttc cag cac cag 250
Pro Leu Asp Glu Arg Ile Val Phe Ser Gly Asn Leu Phe Gln His Gln
55 60 65

gag gac agc aag aag tgg aga aac cgc ttc agc ctc gtg ccc cac aac 298
Glu Asp Ser Lys Lys Trp Arg Asn Arg Phe Ser Leu Val Pro His Asn
70 75 80

tac ggg ctg gtg ctc tac gaa aac aaa gcg gcc tat gag cgg cag gtc 346
Tyr Gly Leu Val Leu Tyr Glu Asn Lys Ala Ala Tyr Glu Arg Gln Val
85 90 95

cca cca cga gcc gtc atc aac agt gca ggc tac aaa atc ctc acg tcc 394
Pro Pro Arg Ala Val Ile Asn Ser Ala Gly Tyr Lys Ile Leu Thr Ser
100 105 110

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gtg gac caa tac ctg gag ctc att ggc aac tcc tta cca ggg acc acg     442
Val Asp Gln Tyr Leu Glu Leu Ile Gly Asn Ser Leu Pro Gly Thr Thr
115                 120                 125                 130

gca aag tcg ggc agt gcc ccc atc ctc aag tgc ccc aca cag ttc ccg     490
Ala Lys Ser Gly Ser Ala Pro Ile Leu Lys Cys Pro Thr Gln Phe Pro
            135                 140                 145

ctc atc ctc tgg cat cct tat gcg cgt cac tac tac ttc tgc atg atg     538
Leu Ile Leu Trp His Pro Tyr Ala Arg His Tyr Tyr Phe Cys Met Met
        150                 155                 160

aca gaa gcc gag cag gac aag tgg cag gct gtg ctg cag gac tgc atc     586
Thr Glu Ala Glu Gln Asp Lys Trp Gln Ala Val Leu Gln Asp Cys Ile
    165                 170                 175

cgg cac tgc aac aat gga atc cct gag gac tcc aag gta gag ggc cct     634
Arg His Cys Asn Asn Gly Ile Pro Glu Asp Ser Lys Val Glu Gly Pro
180                 185                 190

gcg ttc aca gat gcc atc cgc atg tac cga cag tcc aag gag ctg tac     682
Ala Phe Thr Asp Ala Ile Arg Met Tyr Arg Gln Ser Lys Glu Leu Tyr
195                 200                 205                 210

ggc acc tgg gag atg ctg tgt ggg aac gag gtg cag atc ctg agc aac     730
Gly Thr Trp Glu Met Leu Cys Gly Asn Glu Val Gln Ile Leu Ser Asn
            215                 220                 225

ctg gtg atg gag gag ctg ggc cct gag ctg aag gca gag ctc ggc ccg     778
Leu Val Met Glu Glu Leu Gly Pro Glu Leu Lys Ala Glu Leu Gly Pro
        230                 235                 240

cgg ctg aag ggg aaa ccg cag gag cgg cag cgg cag tgg atc cag atc     826
Arg Leu Lys Gly Lys Pro Gln Glu Arg Gln Arg Gln Trp Ile Gln Ile
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tcg gac gcc gtg tac cac atg gtg tac gag cag gcc aag gcg cgc ttc     874
Ser Asp Ala Val Tyr His Met Val Tyr Glu Gln Ala Lys Ala Arg Phe
260                 265                 270

gag gag gtg ctg tcc aag gtg cag cag gtg cag ccg gcc atg cag gcc     922
Glu Glu Val Leu Ser Lys Val Gln Gln Val Gln Pro Ala Met Gln Ala
275                 280                 285                 290

gtc atc cga act gac atg gac caa att atc acc tcc aag gag ctc ctt     970
Val Ile Arg Thr Asp Met Asp Gln Ile Ile Thr Ser Lys Glu Leu Leu
            295                 300                 305

gcc agc aag atc cga gcc ttc atc ctc ccc aag gca gag gtg tgc gtg     1018
Ala Ser Lys Ile Arg Ala Phe Ile Leu Pro Lys Ala Glu Val Cys Val
        310                 315                 320

cgg aac cat gtc cag ccc tac atc cca tcc atc ctg gag gcc ctg atg     1066
Arg Asn His Val Gln Pro Tyr Ile Pro Ser Ile Leu Glu Ala Leu Met
    325                 330                 335
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gtc ccc acc agc cag ggc ttc act gag gtg cga gat gtc ttc ttc aag   1114
Val Pro Thr Ser Gln Gly Phe Thr Glu Val Arg Asp Val Phe Phe Lys
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gag gtc acg gac atg aac ctg aac gtc atc aac gag ggc ggc att gac   1162
Glu Val Thr Asp Met Asn Leu Asn Val Ile Asn Glu Gly Gly Ile Asp
355                 360                 365                 370

aag ctg ggc gag tac atg gag aag ctg tcc cgg ctg gcg tac cac ccc   1210
Lys Leu Gly Glu Tyr Met Glu Lys Leu Ser Arg Leu Ala Tyr His Pro
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ctg aag atg cag agc tgc tat gag aag atg gag tcg ctg cga ctg gac   1258
Leu Lys Met Gln Ser Cys Tyr Glu Lys Met Glu Ser Leu Arg Leu Asp
            390                 395                 400

ggg ctg cag cag cga ttt gat gtg tcc agc acg tcc gtg ttc aag cag   1306
Gly Leu Gln Gln Arg Phe Asp Val Ser Ser Thr Ser Val Phe Lys Gln
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cga gcc cag atc cac atg cgg gag caa atg gac aat gcc gtg tat acg   1354
Arg Ala Gln Ile His Met Arg Glu Gln Met Asp Asn Ala Val Tyr Thr
    420                 425                 430

ttc gag acc ctc ctg cac cag gag ctg ggg aag ggg ccc acc aag gag   1402
Phe Glu Thr Leu Leu His Gln Glu Leu Gly Lys Gly Pro Thr Lys Glu
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gag ctg tgc aag tcc atc cag cgg gtc ctg gag cgg gtg ctg aaa aaa   1450
Glu Leu Cys Lys Ser Ile Gln Arg Val Leu Glu Arg Val Leu Lys Lys
                455                 460                 465

tac gac tac gac agc agc tct gtg cgg aag agg ttc ttc cgg gag gcg   1498
Tyr Asp Tyr Asp Ser Ser Ser Val Arg Lys Arg Phe Phe Arg Glu Ala
            470                 475                 480

ctg ctg cag atc agc atc ccg ttc ctg ctc aag aag ctg gcc cct acc   1546
Leu Leu Gln Ile Ser Ile Pro Phe Leu Leu Lys Lys Leu Ala Pro Thr
        485                 490                 495

tgc aag tcg gag ctg ccc cgg ttc cag gag ctg atc ttc gag gac ttt   1594
Cys Lys Ser Glu Leu Pro Arg Phe Gln Glu Leu Ile Phe Glu Asp Phe
    500                 505                 510

gcc agg ttc atc ctg gtg gaa aac acg tac gag gag gtg gtg ctg cag   1642
Ala Arg Phe Ile Leu Val Glu Asn Thr Tyr Glu Glu Val Val Leu Gln
515                 520                 525                 530

acc gtc atg aag gac atc ctg cag gct gtg aag gag gcc gcg gtg cag   1690
Thr Val Met Lys Asp Ile Leu Gln Ala Val Lys Glu Ala Ala Val Gln
                535                 540                 545

agg aag cac aac ctc tac cgg gac agc atg gtc atg cac aac agc gac   1738
Arg Lys His Asn Leu Tyr Arg Asp Ser Met Val Met His Asn Ser Asp
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ccc aac ctg cac ctg ctg gcc gag ggc gcc ccc atc gac tgg ggc gag   1786
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Pro Asn Leu His Leu Leu Ala Glu Gly Ala Pro Ile Asp Trp Gly Glu
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gag tac agc aac agc ggc ggg ggc ggc agc ccc agc ccc agc acc ccg   1834
Glu Tyr Ser Asn Ser Gly Gly Gly Gly Ser Pro Ser Pro Ser Thr Pro
    580                 585                 590

gag tca gcc acc ctc tcg gaa aag cga cgg cgc gcc aag cag gtg gtc   1882
Glu Ser Ala Thr Leu Ser Glu Lys Arg Arg Arg Ala Lys Gln Val Val
595                 600                 605                 610

tct gtg gtc cag gat gag gag gtg ggg ctg ccc ttt gag gct agc cct   1930
Ser Val Val Gln Asp Glu Glu Val Gly Leu Pro Phe Glu Ala Ser Pro
                615                 620                 625

gag tca cca cca cct gcg tcc ccg gac ggt gtc act gag atc cga ggc   1978
Glu Ser Pro Pro Pro Ala Ser Pro Asp Gly Val Thr Glu Ile Arg Gly
            630                 635                 640

ctg ctg gcc caa ggt ctg cgg cct gag agc ccc cca cca gcc ggc ccc   2026
Leu Leu Ala Gln Gly Leu Arg Pro Glu Ser Pro Pro Pro Ala Gly Pro
        645                 650                 655

ctg ctc aac ggg gcc ccc gct ggg gag agt ccc cag cct aag gcc gcc   2074
Leu Leu Asn Gly Ala Pro Ala Gly Glu Ser Pro Gln Pro Lys Ala Ala
    660                 665                 670

ccc gag gcc tcc tcg ccg cct gcc tca ccc ctc cag cat ctc ctg cct   2122
Pro Glu Ala Ser Ser Pro Pro Ala Ser Pro Leu Gln His Leu Leu Pro
675                 680                 685                 690

gga aag gct gtg gac ctt ggg ccc ccc aag ccc agc gac cag gag act   2170
Gly Lys Ala Val Asp Leu Gly Pro Pro Lys Pro Ser Asp Gln Glu Thr
                695                 700                 705

gga gag cag gtg tcc agc ccc agc agc cac ccc gcc ctc cac acc acc   2218
Gly Glu Gln Val Ser Ser Pro Ser Ser His Pro Ala Leu His Thr Thr
            710                 715                 720

acc gag gac agt gca ggg gtg cag act gag ttc taggccagtg ggtccctgac 2271
Thr Glu Asp Ser Ala Gly Val Gln Thr Glu Phe
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His Glu Ile Glu Gly Thr Gly Leu Pro Gln Ala Gln Leu Leu Trp Arg
        35                  40                  45

Lys Val Pro Leu Asp Glu Arg Ile Val Phe Ser Gly Asn Leu Phe Gln
    50                  55                  60

His Gln Glu Asp Ser Lys Lys Trp Arg Asn Arg Phe Ser Leu Val Pro
65                  70                  75                  80
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His Asn Tyr Gly Leu Val Leu Tyr Glu Asn Lys Ala Ala Tyr Glu Arg
                    85                  90                  95

Gln Val Pro Pro Arg Ala Val Ile Asn Ser Ala Gly Tyr Lys Ile Leu
            100                 105                 110

Thr Ser Val Asp Gln Tyr Leu Glu Leu Ile Gly Asn Ser Leu Pro Gly
        115                 120                 125

Thr Thr Ala Lys Ser Gly Ser Ala Pro Ile Leu Lys Cys Pro Thr Gln
    130                 135                 140

Phe Pro Leu Ile Leu Trp His Pro Tyr Ala Arg His Tyr Tyr Phe Cys
145                 150                 155                 160

Met Met Thr Glu Ala Glu Gln Asp Lys Trp Gln Ala Val Leu Gln Asp
                165                 170                 175

Cys Ile Arg His Cys Asn Asn Gly Ile Pro Glu Asp Ser Lys Val Glu
            180                 185                 190

Gly Pro Ala Phe Thr Asp Ala Ile Arg Met Tyr Arg Gln Ser Lys Glu
        195                 200                 205

Leu Tyr Gly Thr Trp Glu Met Leu Cys Gly Asn Glu Val Gln Ile Leu
    210                 215                 220

Ser Asn Leu Val Met Glu Glu Leu Gly Pro Glu Leu Lys Ala Glu Leu
225                 230                 235                 240

Gly Pro Arg Leu Lys Gly Lys Pro Gln Glu Arg Gln Arg Gln Trp Ile
                245                 250                 255

Gln Ile Ser Asp Ala Val Tyr His Met Val Tyr Glu Gln Ala Lys Ala
            260                 265                 270

Arg Phe Glu Glu Val Leu Ser Lys Val Gln Gln Val Gln Pro Ala Met
        275                 280                 285

Gln Ala Val Ile Arg Thr Asp Met Asp Gln Ile Ile Thr Ser Lys Glu
    290                 295                 300

Leu Leu Ala Ser Lys Ile Arg Ala Phe Ile Leu Pro Lys Ala Glu Val
305                 310                 315                 320

Cys Val Arg Asn His Val Gln Pro Tyr Ile Pro Ser Ile Leu Glu Ala
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Leu Met Val Pro Thr Ser Gln Gly Phe Thr Glu Val Arg Asp Val Phe
            340                 345                 350

Phe Lys Glu Val Thr Asp Met Asn Leu Asn Val Ile Asn Glu Gly Gly
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Ile Asp Lys Leu Gly Glu Tyr Met Glu Lys Leu Ser Arg Leu Ala Tyr
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His Pro Leu Lys Met Gln Ser Cys Tyr Glu Lys Met Glu Ser Leu Arg
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Lys Gln Arg Ala Gln Ile His Met Arg Glu Gln Met Asp Asn Ala Val
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Tyr Thr Phe Glu Thr Leu Leu His Gln Glu Leu Gly Lys Gly Pro Thr
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Lys Glu Glu Leu Cys Lys Ser Ile Gln Arg Val Leu Glu Arg Val Leu
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Lys Lys Tyr Asp Tyr Asp Ser Ser Ser Val Arg Lys Arg Phe Phe Arg
465 470 475 480

Glu Ala Leu Leu Gln Ile Ser Ile Pro Phe Leu Leu Lys Lys Leu Ala
485 490 495

Pro Thr Cys Lys Ser Glu Leu Pro Arg Phe Gln Glu Leu Ile Phe Glu
500 505 510

Asp Phe Ala Arg Phe Ile Leu Val Glu Asn Thr Tyr Glu Glu Val Val
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Leu Gln Thr Val Met Lys Asp Ile Leu Gln Ala Val Lys Glu Ala Ala
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Val Gln Arg Lys His Asn Leu Tyr Arg Asp Ser Met Val Met His Asn
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Ser Asp Pro Asn Leu His Leu Leu Ala Glu Gly Ala Pro Ile Asp Trp
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Gly Glu Glu Tyr Ser Asn Ser Gly Gly Gly Gly Ser Pro Ser Pro Ser
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Thr Pro Glu Ser Ala Thr Leu Ser Glu Lys Arg Arg Arg Ala Lys Gln
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Val Val Ser Val Val Gln Asp Glu Glu Val Gly Leu Pro Phe Glu Ala
610 615 620

Ser Pro Glu Ser Pro Pro Pro Ala Ser Pro Asp Gly Val Thr Glu Ile
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Arg Gly Leu Leu Ala Gln Gly Leu Arg Pro Glu Ser Pro Pro Pro Ala
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Gly Pro Leu Leu Asn Gly Ala Pro Ala Gly Glu Ser Pro Gln Pro Lys
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Ala Ala Pro Glu Ala Ser Ser Pro Pro Ala Ser Pro Leu Gln His Leu
675 680 685

Leu Pro Gly Lys Ala Val Asp Leu Gly Pro Pro Lys Pro Ser Asp Gln
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Thr Thr Thr Glu Asp Ser Ala Gly Val Gln Thr Glu Phe
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    29

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☒ ***Scanned copy is best available.*** Figure 2 is very dark